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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

REPLY TO THE ATTENTION OF

January 7, 2002

Lois Kimbol
Dechert Price & Rhoads
4000 Bell Atlantic Tower
1717 Arch Street
Philadelphia, Pennsylvania 19103-2793

Eugene Smary
Warner Norcross & Judd
900 Fifth Third Center
111 Lyon Street NW
Grand Rapids, Michigan 49503-2487

Donald McConnell
The Sherwin-Williams Company
101 Prospect Avenue, N.W.
Cleveland, Ohio 44115

Re: Administrative Order by Consent
Eagle Zinc Company Site, Docket No. V-W-'02-C-672

Dear Sir or Madam:

Enclosed please find an executed copy of the Administrative Order by Consent issued for this Site pursuant to Sections 104, 107 and 122 of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended, 42 U.S.C. §§9604, 9607 and 9622. Thank you for your cooperation in this matter.

If you have any questions regarding this Order, please contact me at (312) 886-0562 or Dion Novak, Remedial Project Manager, at (312) 886-7437.

Sincerely yours,

A handwritten signature in black ink, appearing to read "TK", written over a horizontal line.

Thomas J. Krueger
Associate Regional Counsel

Enclosure

cc: Rick Lanham, IEPA

UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY
REGION 5

EAGLE ZINC COMPANY SITE
HILLSBORO, ILLINOIS

ADMINISTRATIVE ORDER BY
CONSENT PURSUANT TO
SECTIONS 104, 107 AND 122 OF CERCLA

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5

V-W-102-C-672

IN THE MATTER OF:)	Docket No.
)	
EAGLE ZINC COMPANY SITE)	ADMINISTRATIVE ORDER BY
)	CONSENT PURSUANT TO
HILLSBORO, ILLINOIS)	SECTIONS 104, 107 & 122 OF THE
)	COMPREHENSIVE ENVIRONMENTAL
Respondents:)	RESPONSE, COMPENSATION, AND
)	LIABILITY ACT, as amended,
Listed in Attachment A)	42 U.S.C. §§ 9604, 9607 and
)	9622

I. JURISDICTION AND GENERAL PROVISIONS

This Administrative Order by Consent (the "Order") is entered voluntarily by the United States Environmental Protection Agency ("U.S. EPA") and the Respondents. The Order is issued pursuant to the authority vested in the President of the United States by Sections 104, 107 and 122 of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended ("CERCLA"), 42 U.S.C. §§ 9604, 9607 and 9622. This authority has been delegated to the Administrator of the U.S. EPA by Executive Order No. 12580, January 23, 1987, 52 Federal Register 2923, and further delegated to the Regional Administrators by U.S. EPA Delegation Nos. 14-14-A, 14-14-C and 14-14-D, and to the Director, Superfund Division, Region 5, by Regional Delegation Nos. 14-14-A, 14-14-C and 14-14-D.

This Order requires the Respondents to conduct a Remedial Investigation and Feasibility Study ("RI/FS") to investigate the nature and extent of contamination at the Eagle Zinc Company Site in Hillsboro, Illinois (the "Site"), which is generally depicted in figure A, and develop and evaluate potential remedial alternatives. The RI/FS shall evaluate response actions consistent with 40 CFR Part 300.430, to address the environmental concerns in connection with the areas of contamination located within and surrounding the Site. Remedial action(s) selected through the RI/FS process are to be implemented pursuant to a Record of Decision to be issued by U.S. EPA. Implementation of the Record of Decision is not required by this Order.

A copy of this Order will also be provided to the State of Illinois, which has been notified of the issuance of this Order. The U.S. EPA has also notified the Federal Natural Resource trustees of the negotiations in this action pursuant to the requirements of Section 122(j) of CERCLA.

The Respondents to this Consent Order agree to undertake all actions required by the terms and conditions hereunder, and

consent to and will not contest or legally challenge the issuance of this Consent Order or the U.S. EPA's jurisdiction regarding this Consent Order. Respondents' participation in this Order shall not constitute an admission of liability or of U.S. EPA's Findings of Fact or Conclusions of Law and Determinations contained in this Order except in a proceeding to enforce the terms of this Order. Respondents agree to comply with and be bound by the terms of this Order. Respondents further agree that in a proceeding to enforce the terms of this Order, they will not contest the basis or validity of this Order or its terms.

This Order is subject to the rights, limitations and restrictions contained in the Judgment on Decision ("Judgment on Decision") entered by the United States Bankruptcy Court for the Southern District of Ohio, Western Division in the matter In Re: Eagle-Picher Industries, Inc., et al., Consolidated Case Nos. 1-91-00100.

II. PARTIES BOUND

This Order applies to and is binding upon U.S. EPA and upon Respondents and Respondents' receivers, trustees, successors and assigns. Any change in ownership or corporate status of Respondents including, but not limited to, any transfer of assets or real or personal property shall not alter such Respondents' responsibilities under this Order.

The "Performing Respondents" are T. L. Diamond and Company, Inc. and The Sherwin-Williams Company. Performing Respondents shall undertake the response actions described in this Order. Whenever the term "Respondent" or "Respondents" is used in this Order, it shall mean only the Performing Respondents unless otherwise noted. In light of the Judgment on Decision, Eagle-Picher Industries, Inc. ("Eagle-Picher") will make payments to a trust fund established by all three Respondents for performance of the work described in this Order. The terms and conditions of such payment by Eagle-Picher are not controlled by this Order, but are described in a Participation Agreement signed by Eagle-Picher, T. L. Diamond and Company, Inc., and The Sherwin-Williams Company. Non-performance by one or more of the Respondents with any provision of this Order shall not excuse a Performing Respondent from its obligation to comply with this Order.

Respondents shall ensure that their contractors, subcontractors, and representatives receive a copy of this Order, and comply with this Order. Respondents shall be responsible for any noncompliance with this Order. Respondents shall file a copy of this Order with the local Recorder of Deeds.

III. STATEMENT OF PURPOSE

In entering into this Order, the objectives of U.S. EPA and the Respondents are: (a) to determine the nature and extent of contamination and any threat to the public health, welfare, or the environment caused by the release or threatened release of hazardous substances, pollutants or contaminants at or from the Site by conducting a remedial investigation as more specifically set forth in the Statement of Work ("SOW") attached as Attachment B to this Order; (b) to determine and evaluate alternatives for remedial action to prevent, mitigate or otherwise respond to or remedy any release or threatened release of hazardous substances, pollutants, or contaminants at or from the Site or facility, by conducting a feasibility study as more specifically set forth in the SOW; and (c) to provide for the recovery of oversight costs incurred by U.S. EPA with respect to this Order.

IV. FINDINGS OF FACT

Based on available information, including the Administrative Record in this matter, U.S. EPA hereby finds, and, for purposes of enforceability of this Order only, the Respondents stipulate that the factual statutory prerequisites under CERCLA necessary for issuance of this Order have been met. U.S. EPA's findings and this stipulation include the following:

1. The Site is located on Smith Road and Industrial Park Drive in Hillsboro, Illinois. Approximately 8,456 people live within a 4-mile radius of the Site with the nearest residential property located within 200 feet.
2. T. L. Diamond and Company Inc., has owned the Site since 1984. The Site was owned by Sherwin Williams between approximately 1980 until 1984. From approximately 1919 to 1980, Eagle-Picher was the owner of the Site.
3. Zinc oxide smelting has been conducted at the Site since approximately 1917. Historically, other manufacturing operations, including sulfuric acid production, have also been conducted at the Site. Zinc oxide, a white powder residue, is generated by the smelting process. The zinc oxide manufacturing process residues are stored on the Site in piles.
4. Soil sampling results during several Site assessments by the Illinois Environmental Protection Agency ("IEPA") indicated elevated levels of zinc, lead, cadmium, and arsenic.
5. The Site is not currently listed on the National Priorities List of Contaminated Sites.

V. CONCLUSIONS OF LAW AND DETERMINATIONS

Based on the Findings of Fact set forth above, and the Administrative Record in this matter, U.S. EPA has determined that:

1. The Eagle Zinc Company Site is a "facility" as defined by Section 101(9) of CERCLA, 42 U.S.C. § 9601(9).
2. Lead, cadmium, zinc and arsenic are "hazardous substances" as defined by Section 101(14) of CERCLA, 42 U.S.C. § 9601(14).
3. Each Respondent is a "person" as defined by Section 101(21) of CERCLA, 42 U.S.C. § 9601(21).
4. Each Respondent is a person who either allegedly generated the hazardous substances found at the Site, is a person who at the time of disposal of any hazardous substances owned or operated the Site, or is a person who arranged for disposal or transport for disposal of hazardous substances at the Site. Each Respondent therefore may be liable under Section 107(a) of CERCLA, 42 U.S.C. § 9607(a).
5. The presence of hazardous substances at the Site or the past, present or potential migration of hazardous substances currently located at or emanating from the Site, or the placement of hazardous substances from the Site onto off-site areas constitute actual and/or threatened "releases" of hazardous substances from the facility into the "environment" as defined by Sections 101(8) and (22) of CERCLA, 42 U.S.C. §§ 9601(8) and (22).
6. The actions required by this Order are necessary to protect the public health, welfare, or the environment, and are not inconsistent with the NCP and CERCLA.

VI. ORDER

Based upon the foregoing Findings of Fact, Conclusions of Law and Determinations, and the Administrative Record for this Site, it is hereby ordered and agreed that each Respondent shall comply with the following provisions, including but not limited to all attachments to this Order, and all documents incorporated by reference into this Order, and perform the following actions:

1. Designation of Contractor, Project Coordinator, On-Scene Coordinator or Remedial Project Manager

Respondents shall perform the actions required by this Order themselves or retain a contractor to undertake and complete the

requirements of this Order. Respondents shall notify U.S. EPA of Respondents' qualifications or the name and qualifications of such contractor, whichever is applicable, within 14 calendar days of the effective date of this Order. Respondents shall also notify U.S. EPA of the name and qualifications of any other contractors or subcontractors retained to perform work under this Order at least 10 calendar days prior to commencement of such work. U.S. EPA retains the right to disapprove of the Respondents performing the work or any of the contractors and/or subcontractors retained by the Respondents. If U.S. EPA disapproves a selected contractor, Respondents shall retain a different contractor within 20 calendar days following U.S. EPA's disapproval, and shall notify U.S. EPA of that contractor's name and qualifications within 20 calendar days of U.S. EPA's disapproval.

Within 14 calendar days after the effective date of this Order, the Respondents shall designate a Project Coordinator who shall be responsible for administration of all the Respondents' actions required by the Order. Respondents shall submit the designated coordinator's name, address, telephone number, and qualifications to U.S. EPA. U.S. EPA retains the right to disapprove of any Project Coordinator named by the Respondents. If U.S. EPA disapproves a selected Project Coordinator, Respondents shall retain a different Project Coordinator within 20 calendar days following U.S. EPA's disapproval and shall notify U.S. EPA of that person's name and qualifications within 20 calendar days of U.S. EPA's disapproval. Receipt by Respondents' Project Coordinator of any notice or communication from U.S. EPA relating to this Order shall constitute receipt by all Respondents.

The U.S. EPA has designated Dion Novak of the Remedial Response Branch, Region 5, as its Remedial Project Manager ("RPM"). Respondents shall direct all submissions required by this Order to the RPM along with the required copies in accordance with Section XIX (Submittals/Correspondence). All Respondents are encouraged to make their submissions to U.S. EPA on recycled paper (which includes significant post-consumer waste paper content where possible) and using two-sided copies.

U.S. EPA and Respondents shall have the right, subject to the preceding paragraphs, to change their designated RPM or Project Coordinator. U.S. EPA shall notify the Respondents, and Respondents shall notify U.S. EPA, as early as possible before such a change is made, but in no case less than 24 hours before such a change. The initial notification may be made orally but it shall be promptly followed by a written notice within 4 calendar days of oral notification.

2. Work to Be Performed

Respondents shall develop and submit to U.S. EPA for approval (with a copy to the Illinois EPA ("IEPA")) the reports described in this Section, including the RI/FS report, in accordance with the attached SOW. The SOW is incorporated into and made an enforceable part of this Order. The RI/FS shall be performed, as detailed in the SOW and in this Order, to cover (i) the geographic area depicted on Figure A as the Site, and (ii) any location to which hazardous substances, pollutants or contaminants have migrated from the Site.

The RI and FS reports shall be consistent with, at a minimum, U.S. EPA guidance entitled, "Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA" (U.S. EPA, Office of Emergency and Remedial Response, October, 1988) and any other published guidance that U.S. EPA uses in conducting a RI/FS.

2.1 Preliminary Site Evaluation Report and RI/FS Work Plan

Within 45 calendar days of the effective date of this Order, the Respondents shall submit to U.S. EPA and IEPA a draft Preliminary Site Evaluation Report ("PSE Report") that is consistent with this Order and the SOW.

Within 90 calendar days of the effective date of this Order, the Respondents shall submit to U.S. EPA and IEPA a draft RI/FS work plan that is consistent with this Order and the SOW.

U.S. EPA and Respondents agree to meet within 14 days and 21 days, respectively (or such longer time as agreed to by the Parties), after submittal of the draft PSE Report and/or draft RI/FS work plan to discuss the contents of such report.

Upon approval by U.S. EPA (in consultation with IEPA), Respondents shall implement all activities required by the RI/FS Work Plan in accordance with the approved schedules. Respondents shall not commence or undertake any sampling activities either on or off-Site without prior U.S. EPA approval.

2.1.1 Health and Safety Plan

As part of the RI/FS work plan, the Respondents shall submit for U.S. EPA review and comment (in consultation with IEPA) a plan that ensures the protection of the public health and safety during performance of work under this Order. The plan shall comply with applicable Occupational Safety and Health Administration ("OSHA") regulations found at 29 CFR Part 1910. If U.S. EPA determines it is appropriate, the plan shall also include contingency planning. Respondents shall incorporate all changes to the plan recommended by U.S. EPA,

and implement the plan during the pendency of the RI/FS.

2.1.2 Quality Assurance and Sampling

As part of the RI/FS work plan, the Respondents shall ensure that all sampling and analyses performed pursuant to this Order conforms to U.S. EPA direction, approval, and guidance regarding sampling, quality assurance/quality control ("QA/QC"), data validation, and chain of custody procedures. Respondents shall ensure that the laboratory used to perform the analyses participates in a QA/QC program that complies with U.S. EPA guidance.

Upon request by U.S. EPA, Respondents shall have such a laboratory analyze samples submitted by U.S. EPA for quality assurance monitoring. Respondents shall provide to U.S. EPA the quality assurance/quality control procedures followed by all sampling teams and laboratories performing data collection and/or analysis. Respondents shall also ensure provision of analytical tracking information consistent with, at a minimum, OSWER Directive No. 9240.0-2B, "Extending the Tracking of Analytical Services to PRP-Lead Superfund Sites."

Upon request by U.S. EPA, Respondents shall allow U.S. EPA, IEPA, or their authorized representatives to take split and/or duplicate samples of any samples collected by Respondents or their contractors or agents while performing work under this Order. Respondents shall notify U.S. EPA and IEPA not less than 14 calendar days in advance of any sample collection activity. U.S. EPA and IEPA reserve the right to take any additional samples that they deem necessary.

2.2 RI Report

The RI Report will be developed in three primary phases: the Phase I Technical Memorandum, the Phase II Technical Memorandum, and the Risk Assessment Report.

2.2.1 Phase I Technical Memorandum

Respondents shall submit to U.S. EPA for approval (with a copy to IEPA) a Phase I Technical Memorandum, in accordance with the schedule contained in the SOW, or such alternative time as requested by Respondents and approved by U.S. EPA. The Phase I Technical Memorandum shall present the results of the Phase I Source Characterization activities as described in the SOW.

U.S. EPA and Respondents agree to meet within 14 days (or such longer time as agreed to by the Parties) after submittal of the draft Phase I Technical Memorandum to discuss the contents of such report.

2.2.2 Phase II Technical Memorandum

Respondents shall submit to U.S. EPA for approval (with a copy to IEPA) a Phase II Technical Memorandum, in accordance with the schedule contained in the SOW, or such alternative time as requested by Respondents and approved by U.S. EPA. The Phase II Technical Memorandum shall present the results of the Phase II Migration Pathway Assessment activities as described in the SOW.

U.S. EPA and Respondents agree to meet within 14 days (or such longer time as agreed to by the Parties) after submittal of the draft Phase II Technical Memorandum to discuss the contents of such report.

2.2.3 Risk Assessment Report

Respondents shall submit to U.S. EPA for approval (with a copy to IEPA) a Risk Assessment Report, in accordance with the schedule contained in the SOW, or such alternative time as requested by Respondents and approved by U.S. EPA. The Risk Assessment Report shall present the results of the Risk Assessment activities as described in the SOW.

U.S. EPA and Respondents agree to meet within 14 days (or such longer time as agreed to by the Parties) after submittal of the draft Risk Assessment Report to discuss the contents of such report.

2.2.4 Final RI Report

Within 45 calendar days after approval of the Risk Assessment Report, or such alternative time as requested by Respondents and approved by U.S. EPA, the Respondents shall submit to U.S. EPA for approval (with a copy to IEPA) a draft RI Report that is consistent with this Order and the SOW.

U.S. EPA and Respondents agree to meet within 14 days (or such longer time as agreed to by the Parties) after submittal of the draft RI Report to discuss the contents of such report.

The draft RI report and all revisions thereto shall include the following certification signed by a person who supervised or directed the preparation of that report:

Under penalty of law, I certify that, to the best of my knowledge, after appropriate inquiries of all relevant persons involved in the preparation of this Report, the information submitted is true, accurate, and complete.

2.3 FS Report

Within 60 calendar days after written approval of the RI report or upon such alternative time as requested by Respondents and approved by U.S. EPA, the Respondents shall submit to U.S. EPA for approval (with a copy to IEPA) a draft FS Report that is consistent with this Order and the SOW.

U.S. EPA and Respondents agree to meet within 14 days (or such longer time as agreed to by the Parties) after submittal of the draft FS Report to discuss the contents of such report.

The draft FS report and all revisions thereto shall include the following certification signed by a person who supervised or directed the preparation of that report:

Under penalty of law, I certify that, to the best of my knowledge, after appropriate inquiries of all relevant persons involved in the preparation of this Report, the information submitted is true, accurate, and complete.

Respondents shall not commence or undertake any remedial actions at the Site without prior U.S. EPA approval.

2.4 Reporting

Respondents shall submit a monthly written progress report to U.S. EPA and IEPA concerning actions undertaken pursuant to this Order, beginning 30 calendar days after the effective date of this Order, until termination of this Order, unless otherwise directed in writing by the RPM. These reports shall describe all significant developments during the preceding period, including the work performed and any problems encountered, analytical data received during the reporting period, and developments anticipated during the next reporting period, including a schedule of work to be performed, anticipated problems, and planned resolutions of past or anticipated problems.

Any Respondent that owns any portion of the Site shall, at least 30 calendar days prior to the conveyance of any interest in real property at the Site, give written notice of this Order to the transferee and written notice of the proposed conveyance to U.S. EPA and IEPA. The notice to U.S. EPA and IEPA shall include the name and address of the transferee. The party conveying such an interest shall require that the transferee will provide access as described in Section VI.3. (Access to Property and Information).

2.5 Additional Work

In the event that the U.S. EPA or the Respondents determine that additional work is necessary to accomplish the objectives of the RI/FS as set forth in the SOW, notification of such additional work, and a written rationale therefore, shall be provided to the other parties in writing. Any additional work which Respondents determine to be necessary shall be subject to U.S. EPA's written approval (in consultation with IEPA) prior to commencement of the additional work. Respondents shall complete, in accordance with standards, specifications, and schedules U.S. EPA has approved, any additional work Respondents have proposed, and which U.S. EPA has approved in writing or that U.S. EPA has determined to be necessary, and has provided written notice of pursuant to this paragraph.

The parties acknowledge that the SOW provides detailed descriptions of the work to be performed and that, based on the U.S. EPA's and Respondents' current understanding of Site conditions, the work described in the SOW should satisfy the objectives of the RI/FS and the RI/FS guidance. EPA agrees that it will request additional work under this Order only when it determines based on available data (including information developed pursuant to this Order) that hazardous substances released at or from the Site may present a credible threat to human health or the environment and further investigation of the extent of such hazardous substances is necessary.

2.6 EPA Approval of Plans and other Submissions

U.S. EPA (in consultation with IEPA) may approve, disapprove, require revisions to, or modify any draft work plan, report or other submission from Respondents required under this Section to conform said work plan, report or submission to the requirements of the SOW or the RI/FS Guidance. If U.S. EPA requires revisions, Respondents shall submit a revised submission incorporating all of U.S. EPA's required revisions within 21 calendar days of receipt of U.S. EPA's notification of the required revisions.

Upon receipt of a written notice of disapproval of a work plan, report or other submission, Respondents shall, within 30 days or such longer time as specified by EPA in such notice, correct the deficiencies and resubmit the document. Any stipulated penalties applicable to the submission, as provided in Section XI, shall accrue during the 30-day period or otherwise specified period but shall not be payable unless the resubmission is disapproved or modified due to a material defect. In the event of U.S. EPA disapproval of a revised submittal, Respondents may be deemed in violation of this Order. If Respondents are deemed in violation of this Order, U.S. EPA retains the right to terminate this Order, conduct a complete RI/FS in accordance with CERCLA, and obtain

reimbursement for costs incurred in conducting the RI/FS from the Respondents as permitted by law. Respondents reserve the right to contest such actions as permitted by law.

Alternatively, U.S. EPA may again require the Respondents to correct the deficiencies, in accordance with the preceding Paragraphs. U.S. EPA also retains the right to modify or develop work plan, report or other submission. Respondents shall implement any such work plan, report or other submission as modified or developed by EPA consistent with the SOW, subject only to their right to invoke the dispute resolution process as set forth in Section IX.

Notwithstanding the receipt of a notice of disapproval, Respondents shall proceed, at the direction of U.S. EPA, to take any action required by any non-deficient portion of the relevant submission. Implementation of any non-deficient portion of a submission shall not relieve Respondents of any liability for stipulated penalties under Section XI.

In the event that a resubmitted document is disapproved by U.S. EPA, Respondents shall be deemed to have failed to submit the submission timely and adequately unless Respondents invoke the dispute resolution procedures set forth in Section IX and U.S. EPA's action is overturned pursuant to that Section. The provisions of Sections IX and XI shall govern the implementation of the Order and accrual and payment of any stipulated penalties during Dispute Resolution.

3. Access to Property and Information

As described herein, Respondents shall provide or obtain access to the Site and off-site areas to which access is necessary to implement this Order, and Respondents (including Eagle-Picher) shall provide access to all non-privileged records and documentation related to the conditions at the Site and the actions conducted pursuant to this Order. Such access shall be provided to U.S. EPA, IEPA, and their employees, contractors, agents, consultants, designees, representatives. These individuals shall be permitted to move freely at the Site and appropriate off-site areas to which Respondents has access in order to conduct actions which U.S. EPA determines to be necessary. Respondents may advise U.S. EPA and IEPA of health and safety procedures applicable to ongoing manufacturing operations at the Site, and U.S. EPA and IEPA representatives will act consistent with those procedures and avoid interference with current manufacturing operations at the Site to the extent practicable. Respondents shall submit to U.S. EPA and IEPA, no later than with the first monthly progress report following receipt, the results of all sampling or tests and all other data generated by Respondents or their contractor(s), or on the

Respondents' behalf during implementation of this Order.

Where work or action under this Order is to be performed in areas owned by or in possession of someone other than Respondents, Respondents shall use their best efforts (including making appropriate commercially reasonable payments) to obtain all necessary access agreements 60 calendar days prior to the need for such access, or as otherwise specified in writing by the RPM. Respondents shall notify U.S. EPA within 4 business days if, after using their best efforts, they are unable to obtain such agreements. Respondents shall describe in writing their efforts to obtain access. U.S. EPA may, in its discretion, then assist Respondents in gaining access, to the extent necessary to effectuate the actions described herein, using such means as U.S. EPA deems appropriate. U.S. EPA shall also extend the schedules under this Order as necessary if Respondents have failed to obtain access despite using their best efforts to obtain such access.

4. Record Retention, Documentation, Availability of Information

Respondents (including, for purposes of this Section, Eagle-Picher) shall preserve at least one copy of all non-duplicative documents and information in their possession relating to work performed under this Order, or relating to the hazardous substances found on or released at or from the Site which are the subject of the investigations being conducted under this Order, for six years following completion of the actions required by this Order. At the end of this six year period and at least 60 calendar days before any document or information is destroyed, Respondents shall notify U.S. EPA that all such non-privileged documents and information are available to U.S. EPA for inspection, and upon request, shall provide the originals or copies of such documents and information to U.S. EPA. In addition, Respondents shall provide copies of any such non-privileged documents and information retained under this Section at any time before expiration of the six year period at the written request of U.S. EPA.

If Respondents assert a privilege in lieu of providing documents, they shall provide U.S. EPA with the following: (1) the title of the document, record, or information; (2) the date of the document, record, or information; (3) the name and title of the author of the document, record, or information; (4) the name and title of each addressee and recipient; (5) a description of the contents of the document, record, or information; and (6) the privilege asserted by Respondents. However, no documents, reports, or other information created or generated pursuant to the requirements of this Order shall be withheld on the grounds that they are privileged.

5. Off-Site Shipments

As applicable, all hazardous substances, pollutants or contaminants removed off-site pursuant to this Order for treatment, storage or disposal shall be treated, stored, or disposed of at a facility in compliance, as determined by U.S. EPA, with the U.S. EPA Revised Off-Site Rule, 40 CFR § 300.440. The sale or transfer of oversize residual for reuse off-site shall be acceptable if allowed by IEPA.

6. Compliance With Other Laws

Respondents shall perform all activities required pursuant to this Order in accordance with all the applicable requirements of all federal and state laws and regulations. U.S. EPA has determined that the activities required by this Order are consistent with the National Contingency Plan ("NCP").

Except as provided in Section 121(e) of CERCLA and the NCP, no permit shall be required for any portion of the activities conducted entirely on-site. Where any portion of the activities is to be conducted off-site and requires a federal or state permit or approval, the Respondents shall submit timely and complete applications and take all other actions necessary to obtain and to comply with all such permits or approvals.

This Order is not, and shall not be construed to be, a permit issued pursuant to any federal or state statute or regulation.

7. Emergency Response and Notification of Releases

If any incident, or change in Site conditions, during the activities conducted pursuant to this Order causes or threatens to cause an additional release of hazardous substances from the Site or an endangerment to the public health, welfare, or the environment, the Respondents shall immediately take all appropriate action to prevent, abate or minimize such release or endangerment caused or threatened by the release. Respondents shall also immediately notify the RPM or, in the event of his unavailability, shall notify the Regional Duty Officer, Emergency Response Branch, Region 5 at (312) 353-2318, of the incident or Site conditions. If Respondents fail to respond, U.S. EPA may respond to the release or endangerment and reserve the right to recover costs associated with that response.

Respondents shall submit a written report to U.S. EPA within 10 calendar days after each such release, setting forth the events that occurred and the measures taken or to be taken to mitigate any release or endangerment caused or threatened by the release and to prevent the reoccurrence of such a release. Respondents shall also comply with any other notification requirements,

including those in CERCLA Section 103, 42 U.S.C. § 9603, and Section 304 of the Emergency Planning and Community Right-To-Know Act, 42 U.S.C. § 11004.

VII. AUTHORITY OF THE U.S. EPA REMEDIAL PROJECT MANAGER

The RPM shall be responsible for overseeing the implementation of this Order. The RPM shall have the authority vested in an RPM and OSC by the NCP, including the authority to halt, conduct, or direct any activities required by this Order, or to direct any other response action undertaken by U.S. EPA or Respondents at the Site. Absence of the RPM from the Site shall not be cause for stoppage of work unless specifically directed by the RPM.

VIII. REIMBURSEMENT OF COSTS

Respondents (including, for purposes of this Section, Eagle-Picher) agree to pay all Oversight Costs of the United States related to this Order that are not inconsistent with the NCP. U.S. EPA will send Respondents a bill for "oversight costs" no earlier than 200 days after U.S. EPA issues a Special Notice letter for performance of remedial actions at the Site. "Oversight Costs" are all costs paid by U.S. EPA after the effective date of this Order relating to this Order, including, but not limited to direct and indirect costs related to overseeing work performed under this Order, and reviewing or developing plans, reports and other items pursuant to this Order. The amount of any Oversight Costs shall be calculated using the Superfund Full Cost Indirect Cost Rate Methodology as described in the memorandum from Joseph Dillon, Acting Comptroller, Subject: Accounting for Indirect Costs Associated with Superfund Site-Specific Activities, See 65 FR 35339-35345 (June 2, 2000). In performing its oversight under this Order, U.S. EPA will act consistent with "Interim Guidance on Implementing the Superfund Administrative Reform on PRP Oversight", OSWER Directive No. 9200.0-32P (May 17, 2000).

Respondents shall, within 45 calendar days of receipt of a bill from U.S. EPA, remit a cashier's or certified check for the amount of the bill made payable to the "Hazardous Substance Superfund," to the following address:

U.S. Environmental Protection Agency
Superfund Accounting
P.O. Box 70753
Chicago, Illinois 60673

Respondents shall simultaneously transmit a copy of the check to the Director, Superfund Division, U.S. EPA Region 5, 77 West Jackson Blvd., Chicago, Illinois, 60604-3590. Payments shall be

designated as "Response Costs - Eagle Zinc Company Site" and shall reference the payor(')s(') name and address, the EPA site identification number B5Y7, and the docket number of this Order. In the event that any payment is not made within the deadlines described above, Respondents shall pay interest on the unpaid balance. Interest is established at the rate specified in Section 107(a) of CERCLA, 42 U.S.C. § 9607(a). The interest shall begin to accrue on the date of the Respondents' receipt of the bill. Interest shall accrue at the rate specified through the date of the payment. Payments of interest made under this paragraph shall be in addition to such other remedies or sanctions available to the United States by virtue of Respondents' failure to make timely payments under this Section.

If any dispute over costs is resolved before payment is due, the amount due will be adjusted as necessary. If the dispute is not resolved before payment is due, Respondents shall pay the full amount of the uncontested costs into the Hazardous Substance Fund as specified above on or before the due date. Within the same time period, Respondents shall pay the full amount of the contested costs into an interest-bearing escrow account. Respondents shall simultaneously transmit a copy of both checks to the RPM. Respondents shall ensure that the prevailing party or parties in the dispute shall receive the amount upon which they prevailed from the escrow funds plus interest within 20 calendar days after the dispute is resolved.

IX. DISPUTE RESOLUTION

The parties to this Order shall attempt to resolve, expeditiously and informally, any disagreements concerning this Order. To the extent Eagle-Picher is a party to any dispute under this Order, they shall be included in the term "Respondent" for purposes of this Section. The parties agree to consider utilizing an independent third party mediator acceptable to Respondents and U.S. EPA if necessary to resolve any such disputes. Respondents shall pay for the cost of any such independent third party. U.S. EPA reserves the right to review bills from and approve payments to such independent third party.

If the Respondents object to any U.S. EPA action taken or decision reached pursuant to this Order, including, without limitation, billings for oversight costs or disapproval or required revisions or modifications of any plan or report, the Respondents shall notify U.S. EPA in writing of their objection(s) within 10 calendar days of such action or decision, unless the objection(s) has (have) been informally resolved. This written notice shall include a statement of the issues in dispute, the relevant facts upon which the dispute is based, all factual data, analysis or opinion supporting Respondents' position, and all supporting documentation on which the Respondents rely (hereinafter the

"Statement of Position").

U.S. EPA and Respondents shall within 15 calendar days of U.S. EPA's receipt of the Respondents' Statement of Position, attempt to resolve the dispute through formal negotiations ("Negotiation Period"). The Negotiation Period of 15 calendar days may be extended at the sole discretion of U.S. EPA. U.S. EPA's decision regarding an extension of the Negotiation Period shall not constitute a U.S. EPA action subject to dispute resolution or a final Agency action giving rise to judicial review.

If the formal Negotiation Period concludes without an agreement, U.S. EPA shall submit its Statement of Position, including supporting documentation, no later than 15 calendar days after the conclusion of the formal Negotiation Period.

An administrative record of any dispute under this Section shall be maintained by U.S. EPA. The record shall include the written notification of such dispute, and the Statements of Position served pursuant to the preceding paragraphs.

Any agreement reached by the parties pursuant to this Section shall be in writing, signed by all parties, and shall upon the signature by the parties be incorporated into and become an enforceable element of this Order. If the parties are unable to reach an agreement within the Negotiation Period or any extensions thereof the Director of the U.S. EPA Superfund Division, Region 5, will issue a written decision on the dispute to the Respondents. The decision of U.S. EPA shall be incorporated into and become an enforceable element of this Order upon Respondents' receipt of the decision regarding the dispute.

Respondents' obligations under this Order shall not be tolled by submission of any objection for dispute resolution under this Section. Following resolution of the dispute, as provided by this Section, Respondents shall fulfill the requirement that was the subject of the dispute in accordance with the agreement reached or with U.S. EPA's decision, whichever occurs.

X. FORCE MAJEURE

Respondents agree to perform all requirements under this Order within the time limits established under this Order, unless the performance is delayed by a force majeure. For purposes of this Order, a force majeure is defined as any event arising from causes beyond the control of Respondents that delays or prevents performance of any obligation under this Order despite Respondents' best efforts to fulfill the obligation. Force majeure does not include financial inability to complete the work, increased cost of performance, or normal weather events.

Respondents shall notify U.S. EPA orally within 48 hours after Respondents become aware of any event that Respondents contend constitute a force majeure, and in writing within 7 calendar days after Respondents become aware of any events which constitute a force majeure. Such notice shall: identify the event causing the delay or anticipated delay; estimate the anticipated length of delay, including necessary demobilization and re-mobilization; state the measures taken or to be taken to minimize the delay; and estimate the timetable for implementation of the measures. Respondents shall take all reasonable measures to avoid and minimize the delays. Failure to comply with the notice provision of this Section shall be grounds for U.S. EPA to deny Respondents an extension of time for performance. Respondents shall have the burden of demonstrating by a preponderance of the evidence that the event is a force majeure, that the delay is warranted under the circumstances, and that best efforts were exercised to avoid and mitigate the effects of the delay to the satisfaction of U.S. EPA.

If U.S. EPA determines a delay in performance of a requirement under this Order is or was attributable to a force majeure, the time period for performance of that requirement shall be extended by U.S. EPA for such time as is necessary to complete such activities. Such an extension shall not alter Respondents' obligation to perform or complete other tasks required by the Order which are not directly affected by the force majeure.

XI. STIPULATED AND STATUTORY PENALTIES

For each calendar day, or portion thereof, that Respondents fail to fully perform any requirement of this Order in accordance with the schedule established pursuant to this Order, Respondents shall be liable as follows:

<u>Deliverable/Activity</u>	<u>Penalty For Days 1-7</u>	<u>Penalty For > 7 Days</u>
Failure to Submit a Draft work plan or RI or FS Reports	\$250/Day	\$850/Day
Failure to Submit a revised work plan or RI or FS Reports	\$250/Day	\$850/Day
Failure to Submit PSE Report, Tech Memos or Risk Assessment Report	\$200/Day	\$500/Day

Late Submittal of Progress Reports or Other Miscellaneous Reports/Submittals	\$175/Day	\$375/Day
Failure to Meet any Scheduled Deadline in the Order	\$175/Day	\$375/Day

Upon receipt of written demand by U.S. EPA, Respondents shall make payment to U.S. EPA within 30 calendar days and interest shall accrue on late payments in accordance with Section VIII of this Order ("Reimbursement of Costs").

Even if violations are simultaneous, separate penalties shall accrue for separate violations of this Order. Penalties accrue and are assessed per violation per day. Penalties shall accrue regardless of whether U.S. EPA has notified Respondents of a violation or act of noncompliance. The payment of penalties shall not alter in any way Respondents' obligation(s) to complete the performance of the work required under this Order. Stipulated penalties shall accrue, but need not be paid, during any dispute resolution period concerning the particular penalties at issue. If Respondents prevail upon resolution, Respondents shall pay only such penalties as the resolution requires. In its unreviewable discretion, U.S. EPA may waive its rights to demand all or a portion of the stipulated penalties due under this Section.

The stipulated penalties set forth above shall not be the sole or exclusive remedy for violations of this Order and shall not preclude U.S. EPA from pursuing any other remedy or sanctions which are available to the agencies because of the Respondents' failure to comply with this Consent Order; provided, however, that the U.S. EPA shall not seek civil penalties for any violation of this Order for which a stipulated penalty is provided herein, except in the case of a willful violation of this Order. Should Respondents violate this Order or any portion hereof, U.S. EPA may carry out all or part of the required actions unilaterally, pursuant to Section 104 of CERCLA, 42 U.S.C. §§ 9604. Payment of stipulated penalties does not alter Respondents' obligation to complete performance under this Consent Order.

The imposition of stipulated penalties is subject to the Judgment on Decision.

XII. RESERVATION OF RIGHTS

Except as specifically provided in this Order, nothing herein shall limit the power and authority of U.S. EPA or the United

States to take, direct, or order all actions necessary to protect public health, welfare, or the environment or to prevent, abate, or minimize an actual or threatened release of hazardous substances, pollutants, contaminants, or oil or hazardous or solid waste on, at, or from the Site. Further, except as specifically provided in this Order and in the Judgment on Decision, nothing herein shall prevent U.S. EPA from seeking legal or equitable relief to enforce the terms of this Order. Except as specifically set forth in this Order and in the Judgment on Decision, U.S. EPA also reserves the right to take any other legal or equitable action as it deems appropriate and necessary, or to require the Respondents (including, for purposes of this Section, Eagle-Picher) in the future to perform additional activities pursuant to CERCLA or any other applicable law. U.S. EPA reserves its rights in regard to prior claims, actions, orders, or agreements with Respondents. The covenant not to sue by U.S. EPA set forth in Section XIV does not pertain to any matters other than those expressly identified therein. Except as specifically provided in this Order and in the Judgment on Decision, the United States and U.S. EPA reserve, and this Agreement is without prejudice to, all rights against the Respondents with respect to all other matters, including but not limited to:

- a. liability for failure of Respondents to meet a requirement of this Order by Consent;
- b. liability for costs incurred or to be incurred that are not Oversight Costs as defined in Section VII of this Order;
- c. liability for injunctive relief or administrative order enforcement under Section 106 of CERCLA, 42 U.S.C. § 9606, excluding work performed under the terms of this Order;
- d. criminal liability; and
- e. liability for damages for injury to, destruction of, or loss of natural resources, and for the costs of any natural resource damage assessments.

EPA's reservation of rights is subject to the Judgment on Decision.

XIII. OTHER CLAIMS

By issuance of this Order, the United States and U.S. EPA assume no liability for injuries or damages to persons or property resulting from any acts or omissions of Respondents. The United States or U.S. EPA shall not be a party or be held out as a party to any contract entered into by the Respondents or their directors, officers, employees, agents, successors, representatives, assigns, contractors, or consultants in carrying

out activities pursuant to this Order.

Except as expressly provided in Section XIV (Covenant Not To Sue), nothing in this Order constitutes a satisfaction of or release from any claim or cause of action against the Respondents (including Eagle-Picher) or any person not a party to this Order, for any liability such person may have under CERCLA, other statutes, or the common law, including but not limited to any claims of the United States for costs, damages and interest under Sections 106(a) or 107(a) of CERCLA, 42 U.S.C. §§ 9606(a), 9607(a).

This Order does not constitute a preauthorization of funds under Section 111(a)(2) of CERCLA, 42 U.S.C. § 9611(a)(2). The Respondents (including Eagle-Picher) waive any claim to payment under Sections 106(b), 111, and 112 of CERCLA, 42 U.S.C. §§ 9606(b), 9611, and 9612, against the United States or the Hazardous Substance Superfund arising out of any action performed under this Order.

No action or decision by U.S. EPA pursuant to this Order shall give rise to any right to judicial review except as set forth in Section 113(h) of CERCLA, 42 U.S.C. § 9613(h).

XIV. COVENANT NOT TO SUE

Except as otherwise specifically provided in this Order, upon issuance of the U.S. EPA notice referred to in Section XVIII (Notice of Completion), U.S. EPA covenants not to sue Respondents for judicial or administrative imposition of damages or civil penalties or to take administrative or civil action against Respondents for any failure to perform actions agreed to in this Order except as otherwise reserved herein.

Except as otherwise specifically provided in this Order, in consideration and upon Respondents' entering into this Order and the payment of Oversight Costs specified in Section VIII of this Order, U.S. EPA covenants not to sue or to take administrative action against Respondents under Section 107(a) of CERCLA, 42 U.S.C. § 9607(a), for recovery of Oversight Costs incurred by the United States in connection with this action or this Order. This covenant not to sue shall take effect upon receipt by U.S. EPA of the payments required by Section VIII (Reimbursement of Costs) for Oversight Costs.

These covenants not to sue are conditioned upon the complete and satisfactory performance by Respondents of their obligations under this Order and their financial obligations under the Participation Agreement. These covenants not to sue extend only to the Respondents and do not extend to any other person. For purposes of this Section, the term "Respondent" includes Eagle-Picher.

XV. CONTRIBUTION PROTECTION

With regard to claims for contribution against Respondents (including, for purposes of this Section, Eagle-Picher) for matters addressed in this Order, the Parties hereto agree that the Respondents are entitled to protection from contribution actions or claims to the extent provided by Section 113(f)(2) and 122(h)(4) of CERCLA, 42 U.S.C. §§ 9613(f)(2) and 9622(h)(4). Nothing in this Order precludes Parties to this Order from asserting any claims, causes of action or demands against any persons not parties to this Order for indemnification, contribution, or cost recovery.

XVI. INDEMNIFICATION

Respondents agree to indemnify, save and hold harmless the United States and their agencies, departments, and officials, agents, contractors, subcontractors, employees and representatives from any and all claims or causes of action: (A) arising from, or on account of, the acts or omissions of Respondents and Respondents' officers, directors, employees, agents, contractors, or subcontractors, receivers, trustees, successors or assigns, in carrying out actions pursuant to this Order; (B) for damages or reimbursement arising from or on account of any contract, agreement, or arrangement between (any one or more of) Respondents, and any persons for performance of work on or relating to the Site, including claims on account of construction delays. Nothing in this Order, however, requires indemnification by Respondents for any claim or cause of action against the United States based on negligent action taken solely and directly by U.S. EPA (not including oversight or approval of plans or activities of the Respondents). The U.S. EPA shall not be construed to be a party to any contract involving the Respondents at the Site.

Respondents reserve their right to assert claims against the United States, subject to the provisions of Chapter 171 of Title 28 of the United States Code, for money damages for injury or loss of property or personal injury or death caused by the negligent or wrongful act or omission of any employee of the U.S. EPA while acting within the scope of his office or employment under circumstances where the United States, if a private person, would be liable to the claimant in accordance with the law of the place where the act or omission occurred. However, any such claim shall not include a claim for any damages caused, in whole or in part, by the act or omission of any person, including any contractor, who is not a federal employee as that term is defined in 28 U.S.C. § 2671; nor shall any such claim include a claim based on U.S. EPA's selection of response actions, or the oversight or approval of the Respondents' plans or activities. The foregoing applies

only to claims which are brought pursuant to any statute other than CERCLA and for which the waiver of sovereign immunity is found in a statute other than CERCLA.

XVII. MODIFICATIONS

Except as otherwise specified in Section VI. 2. (Work To Be Performed), if any party believes modifications to any plan or schedule are necessary during the course of this project they shall conduct informal discussions regarding such modifications with the other parties. Any agreed-upon modifications to any plan or schedule shall be memorialized in writing within 10 calendar days; however, the effective date of the modification shall be the date of the RPM's oral direction if confirmed by the writing. Any other requirements of this Order may be modified in writing by mutual agreement of the parties. Any modification to this Order shall be incorporated into and made an enforceable part of this Order.

If Respondents seek permission to deviate from any approved plan or schedule, Respondents' Project Coordinator shall submit a written request to U.S. EPA for approval (in consultation with IEPA) outlining the proposed modification and its basis.

No informal advice, guidance, suggestion, or comment by U.S. EPA regarding reports, plans, specifications, schedules, or any other writing submitted by the Respondents shall relieve Respondents of their obligations to obtain such formal approval as may be required by this Order, and to comply with all requirements of this Order unless it is formally modified.

XVIII. NOTICE OF COMPLETION

When U.S. EPA determines that all work, including the RI/FS Report, has been fully performed in accordance with this Order, except for certain continuing obligations required by this Order (e.g., record retention, payment of costs), U.S. EPA will provide written notice to the Respondents.

XIX. SUBMITTALS/CORRESPONDENCE

Any notices, documents, information, reports, plans, approvals, disapprovals, or other correspondence required to be submitted from one party to another under this Order, shall be deemed submitted either when hand-delivered or as of the date of receipt by certified mail/return receipt requested, express mail, or facsimile in accordance with this section.

Correspondence and communications from U.S. EPA and IEPA to Respondents shall be addressed to:

Lois Kimbol
Dechert Price & Rhoads
4000 Bell Atlantic Tower
1717 Arch Street
Philadelphia, Pennsylvania 19103-2793
Phone: (215) 994-25370
FAX: (215) 994-2222
email: "Lois.Kimbol@dechert.com"

Eugene Smary
Warner Norcross & Judd
900 Fifth Third Center
111 Lyon Street NW
Grand Rapids, Michigan 49503-2487
Phone: (616) 752-2129
FAX: (616) 752-2500
email: "smaryee@wnj.com"

Donald McConnell
The Sherwin-Williams Company
101 Prospect Avenue, N.W.
Cleveland, Ohio 44115
Phone: (216) 566-3741
FAX: (216) 566-1708
email: "don.j.mcconnell@sherwin.com"

and
the Project Coordinator to be identified under Section VI.1

All correspondence, communication, and submittals from Respondents shall be directed to the following and additional individuals they identify:

Dion Novak
Remedial Project Manager
United States Environmental Protection Agency
77 West Jackson Blvd., Mailcode SR-6J
Chicago, Illinois 60604-3590
Phone (312) 886-4737
FAX (312) 886-4071
Email "novak.dion@epamail.epa.gov"

AND

Rick Lanham
Illinois Environmental Protection Agency
1021 North Grand Avenue East
Springfield, Illinois 62702
Phone (217) 782-9881
FAX (217) 782-3258

E-mail "rick.lanham@epa.state.il.us"

With copies to:

Thomas Krueger
Associate Regional Counsel
U.S. EPA - Region 5
77 West Jackson Boulevard, C-14J
Chicago, Illinois 606064-3590
Phone (312) 886-4273
FAX (312) 886-0747
E-mail "krueger.thomas@epamail.epa.gov"

XX. SEVERABILITY

If a court of competent jurisdiction issues an order that invalidates any provision of this Order or finds that Respondents have sufficient cause not to comply with one or more provisions of this Order, Respondents shall remain bound to comply with all provisions of this Order not invalidated by the court's order.

XXI. EFFECTIVE DATE AND COMPUTATION OF TIME

This Order shall be effective upon signature by the Director, Superfund Division, U.S. EPA Region 5. For the purposes of this Order, the term "day" shall mean a calendar day. In computing any period of time under this Order, where the last day of the period would fall on a Saturday or Sunday, the period shall run until noon, Central Time of the following Monday and where the last day of the period would fall on a federal holiday, the period shall run until noon, Central Time of the following day.

27

IN THE MATTER OF:

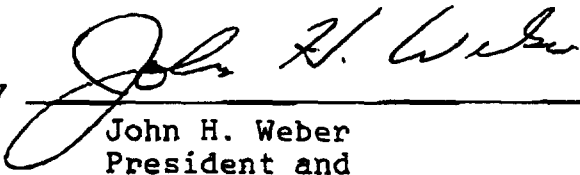
EAGLE ZINC COMPANY SITE HILLSBORO, IL

SIGNATORIES

Each undersigned representative of a signatory to this Administrative Order on Consent certifies that he or she is fully authorized to enter into the terms and conditions of this Order and to bind such signatory, its directors, officers, employees, agents, successors and assigns, to this document.

Agreed this 18th day of December, 2001.

By

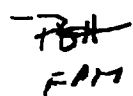


John H. Weber
President and
Chief Executive Officer
Eagle-Picher Industries, Inc.

By _____

By _____

IT IS SO ORDERED AND AGREED



BY: _____

DATE: _____

27

IN THE MATTER OF:

EAGLE ZINC COMPANY SITE HILLSBORO, IL

SIGNATORIES

Each undersigned representative of a signatory to this Administrative Order on Consent certifies that he or she is fully authorized to enter into the terms and conditions of this Order and to bind such signatory, its directors, officers, employees, agents, successors and assigns, to this document.

Agreed this 17th day of December, 2001.

By Thomas L. Diamond CEO
T.L. Diamond & Company, Inc.

By _____

By _____

IT IS SO ORDERED AND AGREED

BY: _____

DATE: _____

IN THE MATTER OF:

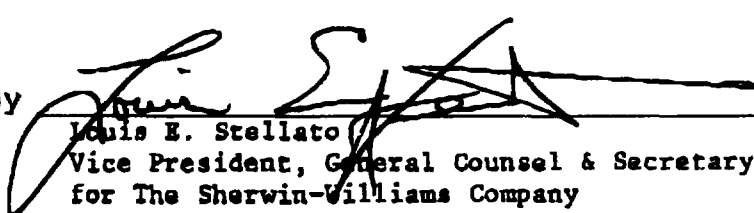
EAGLE ZINC COMPANY SITE HILLSBORO, IL

SIGNATORIES

Each undersigned representative of a signatory to this Administrative Order on Consent certifies that he or she is fully authorized to enter into the terms and conditions of this Order and to bind such signatory, its directors, officers, employees, agents, successors and assigns, to this document.

Agreed this _____ day of _____, 2001.

By


Louis E. Stellato
Vice President, General Counsel & Secretary
for The Sherwin-Williams Company

By _____

By _____

IT IS SO ORDERED AND AGREED

BY: _____

William E. Munro, Director
Superfund Division United States

DATE: _____

IN THE MATTER OF:

EAGLE ZINC COMPANY SITE HILLSBORO, IL

SIGNATORIES

Each undersigned representative of a signatory to this Administrative Order on Consent certifies that he or she is fully authorized to enter into the terms and conditions of this Order and to bind such signatory, its directors, officers, employees, agents, successors and assigns, to this document.


Agreed this _____ day of _____, 2001.

By _____

By _____

By _____

IT IS SO ORDERED AND AGREED

BY: 
for William E. Muno, Director
Superfund Division United States
Environmental Protection Agency
Region 5

DATE: 12/31/01

ATTACHMENT A

1. Eagle-Picher Industries, Inc.
2. T. L. Diamond and Company Inc.
3. The Sherwin-Williams Company

ATTACHMENT B

**STATEMENT OF WORK FOR CONDUCTING A
REMEDIAL INVESTIGATION AND FEASIBILITY STUDY
AT THE EAGLE ZINC COMPANY SITE,
MONTGOMERY COUNTY, ILLINOIS**

This document is the Statement of Work (SOW) for conducting a Remedial Investigation (RI) and Feasibility Study (FS) at the Eagle Zinc Company Site, located in Montgomery County, Hillsboro, Illinois. The purpose of this SOW is to provide the direction and intent of the RI/FS. Within 90 days of the effective date of the Consent Order, a RI/FS Work Plan will be submitted that provides detailed guidance on the execution of the RI/FS.

The purpose of the RI is to investigate the site's physical characteristics, identify the sources of contamination, and determine the nature and extent of contamination at the Eagle Zinc Company Site. The purpose of the FS is to develop and evaluate remedial action alternatives based on the RI data and report. All personnel, materials, and services required to perform the RI/FS will be provided by the Potentially Responsible Parties (PRPs).

The tasks described herein are grouped into the following three categories:

- o Plans and Management,
- o Remedial Investigation (RI), and
- o Feasibility Study (FS).

The Work Plan developed pursuant to this SOW will present a phased, iterative approach that recognizes the interdependency of the RI and FS. The primary intent of the phased approach is to minimize the need for conducting post-FS or supplemental RI/FS activities by thorough characterization of the migration pathways and early identification of the site specific data requirements associated with the applicable remedial technology.

Brief discussions of the major RI/FS tasks are presented, by major topical categories, in the following sections.

I.

PLANS AND MANAGEMENT**A. TASK 0 - RI/FS WORK PLAN PREPARATION**

A RI/FS Work Plan will be prepared for the Eagle Zinc Company Site that details the technical approach, personnel requirements, and schedule for each task described in this SOW. The schedule will show the implementation of tasks and submission of deliverables in weeks subsequent to regulatory (U.S. EPA, in consultation with IEPA) approval and acceptance of prior deliverables. Incorporated into this Work Plan will be the following specific plans (some or all of these submittals may be combined into a single deliverable):

1. Field Sampling Plan

A Sampling Plan that addresses all data acquisition activities will be prepared. The plan will contain a statement of sampling objectives and equipment specifications, required analyses, sample types, and sample locations and frequency. The plans will address specific hydrologic, hydrogeologic, and air transport characterization methods including, but not limited to, geologic mapping, geophysics, field screening, drilling and well installation, flow determination, and sampling. The application of these methods will be described for each major subtask within the site investigation (e.g., waste characterization, migration pathway assessment, and contaminant characterization).

A data management plan will also be developed to document and track investigative data and results. The plan will identify and establish laboratory and data documentation materials and procedures, including laboratory certification information for purposes of demonstrating consistency with CLP procedures and requirements, project file requirements, and project-related progress reporting procedures and documents.

In addition, the plan will identify the data requirements of specific remedial technologies that may be necessary to evaluate remedial alternatives in the FS. It will include an evaluation explaining what additional data are required to support the feasibility study.

2. Quality Assurance Project Plan

A Quality Assurance Project Plan (QAPP), prepared in accordance with current U.S. EPA guidance, will be appended to the Sampling Plan. The QAPP will describe the project and project personnel organization and responsibilities. It will include quality assurance objectives for data (precision, accuracy, completeness, representativeness, comparability, and intended use) and specify sampling procedures, locations, parameters, number of samples, and sample custody.

The QAPP will specify the type and frequency of calibration procedures for field and laboratory

instruments; the type and frequency of internal quality control checks; the type and frequency of quality assurance performance audits and system audits; the preventive maintenance procedures and schedule; specific procedures to assess data precision, representativeness, comparability, accuracy, and completeness of specific measurement parameters, and corrective action procedures for field and laboratory instruments.

The QAPP will also describe how the data will be documented and tracked, including documentation materials and procedures, financial reporting procedures, and documents.

3. Health and Safety Plan

A Health and Safety Plan to protect the health of personnel involved in site activities and the surrounding community, will be developed on the basis of site conditions and be consistent with the following regulations and guidance:

- o 20 CFR 1910.120 (i) (2) - Occupational Health and Safety Administration: Hazardous Waste Operations and Emergency Response, Interim Rule, December 19, 1986.
- o U.S. EPA Order 1440.2 - Health and Safety Requirements for Employees Engaged in Field Activities.
- o U.S. EPA Order 1440.3 - Respiratory Protection.
- o U.S. EPA Occupational Health and Safety Manual.
- o U.S. EPA Interim Standard Operating Procedures (September, 1982).

The health and safety plan shall provide information on provisions to protect site visitors, personnel responsibilities, protective equipment, procedures, protocols, decontamination methods, and medical surveillance.

4. Risk Assessment Plan

A Risk Assessment Plan will be developed quantifying the risks posed by the Eagle Zinc Company Site and analyzing the public health impacts of the remedial alternatives. The methodology presented in this plan will conform to the Risk Assessment Guidance for Superfund, Human Health Evaluation Manual (1991) and any current EPA guidance. The risk assessment plan shall also include the preparation of an ecological risk assessment consistent with current EPA guidance.

B. PREPARATION AND SUBMISSION OF PLANS

The preparation of the workplan will be preceded by an evaluation of the existing information and initiation of investigative support activities (Task 1).

The Work Plan will be submitted in accordance with the schedule defined in Section VIII (Work to be Performed) of the Consent Order. Specifically, the RI/FS Work Plan will be developed and implemented in conformance with all provisions of the Consent Order, this SOW, and the standards set forth in the following statutes, regulations, and guidance:

- o Section 121 of SARA,
- o U.S. EPA "Guidance on Remedial Investigations under CERCLA," dated October 1988, as amended,
- o U.S. EPA "Guidance on Feasibility Studies under CERCLA," dated October 1988, as amended,
- o The National Contingency Plan, dated November 1985, as amended, and
- o Any additional guidance documents provided by the U.S. EPA.

II.

REMEDIAL INVESTIGATION

A. Objectives

The objectives of the RI are to:

- o Characterize the source(s) of potential contamination;
- o Characterize the hydrogeologic setting to determine the most likely contaminant migration pathways and physical features that could affect potential remedial actions;
- o Determine the migration rates, extent, and

characteristics of any contamination that may be present at the site: and

- o Gather data and information to the extent necessary and sufficient to quantify the risk to public health and the environment and to support the development and evaluation of viable remedial alternatives in the FS.

B. Scope

The scope of the Remedial investigation consists of six tasks:

Task 1: Description of Current Situation and Investigative Support

Task 2: Site Investigation

Task 3: Site Investigation Analyses

Task 4: Bench/Pilot Testing Studies

Task 5: Reports

Task 6: Community Relations Support

Each of these tasks is described in the following sections.

TASK 1 - INVESTIGATIVE SUPPORT AND DESCRIPTION OF CURRENT SITUATION

1. Investigative Support

a. Site Mapping

Prepare an accurate topographic map of appropriate working scale. A base map of the site with a scale of 1 inch to 100 feet (1" - 100') and 2-foot contour intervals will be prepared from this topographic map. The base map will illustrate the locations of wetland areas, floodplains, surface water features, drainage patterns, tanks, buildings, utilities, paved areas, easements, right-of-ways, and other pertinent features. Larger scale maps will be produced from the base map as necessary.

In addition to the topographic map, a grid plan will be prepared using the base map and grid overlay. This grid plan will show the location of existing monitoring wells, sampling locations for soil, groundwater, surface water and sediment, water supply wells, and underground utilities. These maps will require surveying to establish horizontal and vertical controls for sites of the work relative to the National Geodetic Vertical Datum of 1929.

Review and verify in the field the legal description of the property. The intent is not to perform a boundary survey, but to locate the boundaries so that future activities do not carry over onto adjacent property without proper permission.

b. Metes and Bound

Assemble a legal description of the site from existing county and township records and results of the site survey.

c. Access Arrangements

Make the necessary arrangements to guarantee access to the site and surrounding parcels. These arrangements will include negotiating access agreements with landowners and obtaining demarcation clearance for all buried utilities and construction of access roads. The PRPs and their attorneys and consultants will be responsible for obtaining access permission for all off-site inspections and sampling locations. Eagle Zinc facility personnel may act as a local contact in this regard. However, if initial attempts at obtaining off-site access are unsuccessful, the PRPs will seek EPA assistance.

d. Preparation of Support Facilities

Initiate and implement the necessary arrangements to construct support facilities and/or procure the equipment necessary to performing a hazardous site investigation. This includes preparation of decontamination facilities, utility hook-ups, and site access control stations.

e. Obtaining tax maps and other information for local authorities

f. Identification of any accessibility issues for heavy equipment used in sampling

2. Preliminary Site Evaluation and Report

Gather and describe the background information pertinent to the site and its environmental concerns, further detailing the purpose of the RI. The data gathered during previous investigations will be reviewed and evaluated. Regional information will be obtained from available USGS and State of Illinois Geologic Survey reports. The existing site information to be reviewed will include but not necessarily be limited to:

- o Illinois Department of Natural Resource and Environmental Protection Agency files.
- o Illinois County Soil Conservation Service reports.
- o Aerial photographs.
- o Historical water quality data.
- o U.S. and State of Illinois Geological Survey files.
- o Disposal records (if available).

In addition to this literature search, on-site activities may be used to confirm and/or update certain information. For example, existing monitoring wells may be inspected to determine if they are functional and the location and status of selected water supply wells field verified.

Information and data that are gathered during these initial steps will be used to generate a preliminary Site Evaluation Report that will address the following:

a. A summary of the site background that includes the pertinent boundary conditions, general site physiography, hydrology, and geology as well as a complete history of waste disposal activities and ownership transfer on the site. The waste disposal history shall also include identification of waste piles present at the site, their location on the site map, their origin and constituent characteristics, and any existing sampling results which can be used to distinguish different pile contents and group similar contents. This history shall include all known information regarding manufacturing practices that generated each waste pile, any current off-site disposal plans, and any proposed reconsolidation procedures coupled with justification for such procedures. This information will be used to design appropriate sampling protocol for pile sampling and shall include the evaluation of the potential for airborne emissions to migrate away from the piles as well as to identify any areas that have been impacted by pile emissions which may need subsequent confirmatory sampling.

b. The nature and extent of the problem that includes a summary of actual or potential on-site and off-site health and environmental effects. This report will emphasize threats or potential threats to the public health.

c. The history of response actions that includes a summary of response actions conducted by local, state, or private parties.

d. A definition of boundary conditions that includes site boundary conditions that limit the areas of investigation. The boundaries will be set so that the on-site activities will cover the .

contaminated media in sufficient detail to support the FS. Boundaries for site access control and site security will also be identified. The boundaries of the study area may or may not correspond to the property boundaries.

e. Identification of potential receptors that includes the identification of private and public water supply wells within a one mile radius of the site. If possible, obtain the well construction details for these wells and other private water supply wells that may have been previously sampled and prepare a table summarizing the known construction details to submit with the original drilling logs.

f. Develop a site conceptual model that includes a description of the physical site conditions as to geology, meteorology, hydrology and hydrogeology. All subsequent site investigation activities will refine and validate this model. The conceptual model will focus on the groundwater flow system and will be based on the depositional history, inferred recharge and discharge mechanisms, estimated topographic and hydraulic gradients, and existing and last land use patterns.

g. A visual inspection of the extreme northern and western portions of the site property (historically unused areas) for locations of any residue and disturbed areas.

The Investigative Support and Description of Current Situation (Task 1) will be conducted prior to, or concurrent with, the Work Plan Preparation (Task 0). The Preliminary Site Evaluation Report will be submitted 45 days after the effective date of the Consent Order.

TASK 2 - SITE INVESTIGATIONS

Investigations necessary to characterize the site and its actual or potential hazard to public health and the environment will be conducted and result in data of adequate technical content to support the development and evaluation of remedial alternatives during the FS. Investigation activities will focus on problem definition and data to support the screening of remedial technologies, alternative development and screening, and detailed evaluation of alternatives.

The site investigation activities will follow the Plans set forth in Task 0. All sample analyses will be conducted at laboratories following EPA CLP procedures or their equivalents. Strict chain of custody procedures will be followed, and all samples will be located on the site map (and grid system) established under Tasks 0 and 1. A description of the types of investigations that will be conducted is presented below.

In the following descriptions of sampling approaches and methodologies, all discussions of the number and types of samples to be taken are current best estimates. The RI/FS workplan will provide that the actual number and types of samples will be adjusted as necessary, based on evaluation of data developed as field work proceeds. If the initial sampling approach is not adequate to meet the SOW objectives or to support assessment of remedial alternatives, further

sampling will be proposed and will be implemented as approved by EPA, in consultation with IEPA. U.S. EPA agrees that it will request additional work under this Order only when it determines based on available data (including information developed pursuant to this Order) that hazardous substances released at or from the Site may present a credible threat to human health or the environment and further investigation of the extent of such hazardous substances is necessary.

A. Phase 1 Source Characterization and Preparation of Technical Memorandum

The first phase of investigation will be carried out to characterize the physical and chemical aspects of the residue waste piles and potential soil and sediment contaminant source areas. The investigation of these source areas will involve obtaining data related to:

Characteristics (e.g., type, quantity, chemical and physical properties, and concentrations) of residual materials generated by site manufacturing practices.

On-site soils and on-site/off-site sediments. The physical and chemical concentration characteristics of on-site soils and drainage way sediments will be evaluated.

This information will be obtained from a combination of existing site information, field inspections, and site sampling activities. The source characterization will culminate in the preparation and submittal of a technical memorandum for the Phase 1 investigation activities. This technical memorandum will summarize the findings of the source characterization and may be used to refine the scope of the Phase 2 investigation activities outlined below.

1. On-site soils investigation

It is estimated that a minimum of 130 shallow soil borings will be needed in on-site areas to characterize and delineate the extent of organic and inorganic contaminant concentrations at the site. The majority of soil borings will be completed in the areas previously identified as Areas 1 through 4 with a minimum of 25 borings per area. Soil borings will also be completed in the manufacturing plant area and in the historically undeveloped northern and western portions of the site property. A minimum of ten soil borings will be completed in each of these three areas.

Soil samples may be screened on-site for metals using a portable X-ray fluorescence (XRF) analyzer. The XRF results will be used to identify samples that will be retained for metals analyses, as well as to identify locations and depths of additional soil borings.

Approximately 20% of the soil samples will be retained for laboratory analysis and that the soil samples will be analyzed for the full suite of Target Analyte List (TAL) metals.

The soil samples will also be screened for organic vapors at the same time as the XRF screening mentioned above. Approximately 10% of the total soil samples will be retained for a more

comprehensive suite of analytes including Target Compound List (TCL) and TAL analytes, and shall include PCBs.

2. Residue Waste Pile Sampling

Each residue pile or group of piles, identified by type of material or spatial considerations, will be evaluated by collecting representative samples in accordance with SW 846 procedures and testing the samples for inorganics using the Toxicity Characteristic Leaching Procedure (TCLP) and the Synthetic Precipitation Leaching Procedure (SPLP). The samples will be collected from trenches excavated to the base of the piles.

3. Sediment Investigation

A sediment investigation will be conducted in on-site and off-site portions of the storm water and surface water drainage systems that originate on-site or enter the site from adjacent properties. The principal objective of the sediment investigation will be to characterize the nature and extent of inorganic impacts on sediments in the drainage systems. The samples will be collected as transect composites at sediment accumulation points or at representative locations in the drainage ditches/streams on-site and off-site and screened for metals using the XRF analyzer and for organic vapors.

A minimum of 16 sediment samples will be collected for laboratory analyses and all sediment samples will be analyzed for TAL metals. Approximately 25% of sediment samples will also be analyzed for a more comprehensive suite of analytes including TCL compounds and PCBs. The initial phase of sampling shall include collection of a sediment sample at or near the confluence of the eastern drainage ditch with Lake Hillsboro.

B. Phase 2 - Migration Pathway Assessment

The second phase of investigation will consist of a migration pathway assessment. The potential migration pathways at the site consist of groundwater and surface water. The migration pathway assessment will culminate in the preparation and submittal of a Phase 2 technical memorandum describing the findings of the Phase 2 investigations. The Phase 2 investigations are expected to include the following activities:

1. Installation of temporary monitoring wells

A series of temporary monitoring wells/piezometers will be installed in the southwestern portion of the property, in the manufacturing plant area, and in the northern and western portions of the site. The temporary wells will be used to 1) provide information concerning the hydraulic relationship between the shallow groundwater and the southwest pond; 2) better characterize the pattern of shallow groundwater flow on-site and off-site; and 3) assist in the identification of locations for additional permanent monitoring wells. A minimum of 20 temporary wells will be

installed, 10 in the southwestern portion of the site, four in the manufacturing area and three in the northern and western portions of the site.

Groundwater screening samples may be collected from selected temporary wells to assist in the identification of locations for installation of additional permanent monitoring wells.

2. Installation of additional permanent monitoring wells

A minimum of ten of the temporary wells will be converted to permanent monitoring wells. The locations of the permanent wells will be determined based on the analytical results of the groundwater screening samples and the groundwater flow patterns at the site. A minimum of four permanent wells will be installed in the southwestern portion of the site, three in the manufacturing area, two in the northern portion of the site, and one in the western portion of the site.

3. Groundwater sample collection and analysis

Following the completion and development of the permanent monitoring wells, all existing and newly installed monitoring wells will be sampled for TAL metals. The metals analyses will be conducted using filtered and unfiltered samples to determine total and dissolved metals concentrations. In addition, a minimum of four samples will be analyzed for a more comprehensive list of parameters (TCL/TAL), including PCBs. A complete round of water level measurements will be made to allow for the construction of a site-wide groundwater elevation contour map.

4. Surface water evaluation

An evaluation will be made of potential on-site sources of storm and surface water impacts and potential locations of surface and storm water discharges. Results of the Phase 1 sediment sampling will be used to determine final Phase 2 surface water sampling locations, which will include some locations where Phase 1 sediment samples were collected. Samples near the outfalls 001 and 002 will also be included in this sampling exercise.

C. Preparation of Risk Assessment Report

Based upon the specific chemicals and ambient levels at the site, the number and location of the surrounding population, and migration pathways, a second report, the Risk Assessment, will be conducted by the responsible parties to evaluate the actual or potential threat to human health, welfare, or the environment. Actual or potential risks will be quantified whenever possible. A general outline of work for the Risk Assessment follows:

- o Select target chemicals for evaluation based on their degree of contribution to the risks

associated with the site.

- o Conduct exposure assessments that include the identification of acute and chronic hazards of concerns and the population(s) at risk.
- o Evaluate existing toxicity information and determine the potential acute and chronic effects of the site contaminants as well as the specific effects such as carcinogenicity, reproductive dysfunction, teratogenicity, neurotoxicity, and other metabolic alterations; and environmental effects of aquatic and terrestrial toxicities.
- o Assess impact by identifying acceptable exposure guidelines or standards, comparing estimated doses with these guidelines or standards. For target chemicals at the site that are designated as carcinogens by EPA, use EPA's evaluations to estimate the increased cancer risks.

This assessment will be conducted in accordance with the procedures described in the Risk Assessment Guidance for Superfund, Human Health Evaluation Manual (1991) and any current guidance. A written report documenting the Risk Assessment methodologies and results should be submitted to U.S. EPA for approval pursuant to the schedule attached to this Statement of Work. The risk assessment shall also include the preparation of an ecological risk assessment consistent with current EPA guidance.

TASK 3 - SITE INVESTIGATION ANALYSES

An analyses of all data collected during this investigation will be made to assure that the quality (e.g., QA/QC procedures have been followed) and quantity of data adequately support the Risk Assessment and FS. The results of the site investigations will be organized and presented in the two technical memoranda and the Remedial Investigation Report

TASK 4 - BENCH/PILOT TESTING STUDIES

Bench and piloting scale testing studies will be performed as necessary to determine the applicability of selected remedial technologies to site specific conditions. These may include treatability studies, aquifer testing, and/or material compatibility testing. These studies will be conducted in the later stages of the RI after the initial screening of remedial technologies and actions.

TASK 5 - REPORTS

1. Progress Reports

Monthly progress reports will be prepared to describe the technical progress of the RI. These reports shall be submitted to the U.S. EPA and IEPA by the tenth business day of each month, following the effective date of the Consent Order. The monthly progress reports shall include the following information:

- o All sampling and testing results produced during the month pursuant to the implementation of the Consent Order;
- o A description of activities completed during the past month pursuant to the Consent Order, as well as such actions and plans that are scheduled for the next month pursuant to the Consent Order;
- o A description of difficulties encountered during the reporting period and the actions taken to rectify the problems;
- o Target and actual completion dates for each element of activity, including the project completion, and an explanation of any deviation from the schedules provided in the RI/FS Work Plan; and
- o Changes in key personnel.

2. Technical Memorandums

The results of specific remedial investigation activities such as the Migration Pathway Assessment, Source Characterization, Risk Assessment, etc., will be submitted in draft form to the U.S. EPA and IEPA throughout the RI process. All responses to U.S. EPA and IEPA comments concerning memorandum issues will be addressed in letters from the Respondent Project Coordinator to the U.S. EPA Remedial Project Manager and will be summarized in the draft RI report. The specific technical memorandums and their associated schedule of submittal have been identified above and will also be identified in the project Work Plan (Task 0).

3. Remedial Investigation Report

A final report covering the remedial investigations, the Remedial Investigation Report (RI), will be prepared. The RI will characterize the site and summarize the data collected and the conclusions drawn from investigative Tasks 1 through 3. The report will be submitted in draft form for review and approval pursuant to the terms of the Consent Order. The RI will not be considered final until a letter of approval is issued by the U.S. EPA Remedial Project Manager.

TASK 6 - COMMUNITY RELATIONS SUPPORT

A community relations program will be implemented by the U.S. EPA, in consultation with the IEPA. The responsible parties will cooperate with the U.S. EPA and the IEPA in providing RI/FS information to the public. The responsible parties will, at the request of the U.S. EPA, participate in the preparation of information distributed to the public, such as fact sheets, and in public meetings that may be held or sponsored by the U.S. EPA to describe activities at, or concerning, the site, including the findings of the RI/FS.

Community relations support will be consistent with Superfund community relations policy as stated in the "Guidance for Implementing the Superfund Program" and Community Relations in Superfund - A Handbook.

III.

FEASIBILITY STUDY

A. Scope

The purpose of the FS is to develop alternative remedial actions, based upon the results of the RI, that will mitigate impacts to public health and welfare and the environment.

The FS will conform to Section 121 of CERCLA (42 U.S.C. § 9621), the NCP as amended, the FS Guidance as amended, and other relevant written U.S. EPA policy and guidance. The FS is comprised of four tasks:

- Task 7: Remedial Alternatives Screening
- Task 8: Remedial Alternatives Evaluation
- Task 9: Feasibility Study Report
- Task 10: Additional Requirements

The intent and purpose of each of these tasks is outlined in the following sections; the technical approach and schedule is detailed in the RI/FS Work Plan (Task 0). To the extent practical, the FS shall follow the presumptive remedy guidance for metals in soils and any other appropriate presumptive remedy guidance.

B. Tasks

TASK 7 - REMEDIAL ALTERNATIVES SCREENING

This task constitutes the first stage of the FS and is comprised of six interrelated subtasks. The goal is to develop and evaluate remedial alternatives for additional screening and evaluation. The Public Health Evaluation results will be considered throughout the evaluation process.

Subtask 7A - Preliminary Remedial Technologies

A master list of potentially feasible technologies will be developed that includes both on-site and off-site remedies. The master list will be screened according to site conditions, waste characteristics, and technical requirements, in order to eliminate or modify those technologies that may prove extremely difficult to implement, require unreasonable time periods, or rely on insufficiently developed technology. Emerging technologies being evaluated through the U.S. EPA's Site Program will also be considered if that information is available.

Subtask 7B - Development of Alternatives

1. Developing Remedial Response Objectives

Develop site-specific objectives based on public health and environmental concerns for the Eagle Zinc Company Site, the description of the current situation, information gathered during the RI, Section 300.68 of the National Contingency Plan (NCP), U.S. EPA's interim guidance, and the requirements of any other applicable U.S. EPA, Federal, and State environmental standards, guidance and advisories as defined under Section 121 of CERCLA. Preliminary cleanup objectives will be developed under formal consultation with the U.S. EPA and IEPA.

2. Assembling Alternatives for Remedial Actions

Develop a comprehensive, site-specific approach for Remedial Action by assembling combinations of identified technologies that include the following:

- a. Treatment alternatives for source control that eliminate the need for long-term management (including monitoring).
- b. Alternatives involving treatment as a principal element to reduce the toxicity, mobility, or volume of waste.

Develop at least two additional alternatives that include the following:

- c. An alternative that involves containment of waste with little or no treatment but protects human health and the environment primarily by preventing exposure to, or reducing the mobility of, the waste.
- d. A no action alternative.

For groundwater response actions, a limited number of remedial alternatives will be developed within a performance range defined in terms of a remediation level. The targeted remediation level is the risk range of 10^{-4} to 10^{-7} for maximum lifetime risk and includes different rates of restoration. If feasible, one alternative that would restore groundwater quality to a 10^{-6} risk for maximum lifetime risk level within five years will be configured.

The remedial action alternatives developed for the Eagle Zinc Company Site may involve both source control and groundwater response actions. In these instances, the two elements may be formulated together so that the comprehensive remedial action is effective and the elements complimentary. Because each element has different requirements, each will be detailed separately in the development and analyses of alternatives.

Subtask 7C - Initial Screening of Alternatives

1. Initial Screening Considerations

The alternatives developed under Subtask 7B will be subjected to an initial screening to narrow the list of potential remedial actions for detailed analyses; the rationale for eliminating alternatives will be included. Initial screening considerations include:

- a. Effectiveness - degree to which the alternative to protects human health and the environment; attains Federal and State Applicable or Relevant and Appropriate Requirements (ARARs) or other applicable criteria, advisories, or guidance; significantly and permanently reduces the toxicity, mobility, or volume of the hazardous constituents and are technically reliable and effective in other respects. Reliability considerations include the potential for failure and the need to replace the remedy.
- b. Implementability - degree to which the alternatives is technically feasible and employs available technologies; the technical and institutional ability to monitor, maintain, and replace the technology over time, and the administrative feasibility of implementing the alternative.

c. Cost - evaluation of construction and long-term costs to operate and maintain the alternative based on conceptual costing information. At this stage of the FS, cost will be used as a factor when comparing alternatives that provide similar results, but not when comparing treatment and non-treatment alternatives.

2. Intent of Alternatives Screening

The initial screening of alternatives incorporating treatment will be conducted with the intent of preserving the most promising alternatives as determined by their likely effectiveness and implementability further analyses. The screening should result in a range of alternatives remaining for further analyses as described previously in Subtask 7B(2).

Innovative alternative technologies will be carried through the screening if there is a reasonable belief they offer either the potential for better treatment performance or implementability, fewer or less adverse impacts than other available approaches, or lower costs for similar performance than the demonstrated technologies.

The containment and no-action alternatives will be carried through the screening process to the detailed analyses.

Subtask 7D - Community Relations Program

A program for community relations support will be developed. The program will be consistent with the Community Relations Program developed under Task 6 and with the conditions set forth in the Consent Order.

Subtask 7E - Data Requirements

Data requirements specific to the relevant and applicable technologies will be identified. These requirements will focus on providing data needed for the detailed evaluation and development of a preferred alternative.

TASK 8 - REMEDIAL ALTERNATIVES EVALUATION

The contractor will conduct a detailed analysis of alternatives which will consist of an individual analysis of each alternative against a set of evaluation criteria and a comparative analysis of all options against the evaluation criteria with respect to one another.

The evaluation criteria are as follows:

Overall Protection of Human Health and the Environment addresses whether or not a remedy provides adequate protection and describes how risks posed through each pathway are eliminated, reduced, or controlled through treatment, engineering controls, or institutional controls.

Compliance with ARARs addresses whether or not a remedy will meet all of the applicable or relevant and appropriate requirements of other Federal and State environmental statutes and/or provide grounds for invoking a waiver.

Long-Term Effectiveness and Permanence refers to the ability of a remedy to maintain reliable protection of human health and the environment over time once cleanup goals have been met.

Reduction of Toxicity, Mobility, or Volume Through Treatment is the anticipated performance of the treatment technologies a remedy may employ.

Short-Term Effectiveness addresses the period of time needed to achieve protection and any adverse impacts on human health and the environment that may be posed during the construction and implementation period until cleanup goals are achieved.

Implementability is the technical and administrative feasibility of a remedy, including the availability of materials and services needed to implement a particular option.

Cost includes estimated capital and operation and maintenance costs, and net present worth costs.

State Acceptance (Support Agency) addresses the technical or administrative issues and concerns the support agency may have regarding each alternative.

Community Acceptance addresses the issues and concerns the public may have to each of the alternatives.

The individual analysis should include: (1) a technical description of each alternative that outlines the waste management strategy involved and identifies the key ARARs associated with each alternative; and (2) a discussion that profiles the performance of that alternative with respect to each of the evaluation criteria. A table summarizing the results of this analysis should be prepared. Once the individual analysis is complete, the alternatives will be compared and

contrasted to one another with respect to each of the evaluation criteria.

An alternative that is preferred, but does not meet the Federal or State public health or environmental ARARs, will be selected only when:

1. The alternative is an interim remedy and will become part of a more comprehensive final remedy that will meet the Federal and State ARARs.
2. Compliance with the ARAR will result in a greater risk to human health and the environment than the alternative options.
3. Compliance with the requirements is technically impractical.
4. The alternative will attain a standard of performance that is equivalent to that required under the otherwise applicable standard, requirement, or limitation through the use of another method or approach.
5. The State has not consistently applied or demonstrated the intent to consistently apply the requirement at other similar facilities across the state.

The evaluation of alternatives to select the appropriate remedy will, in addition to meeting the required findings in Section 300.68(h)(1) of the NCP and reflecting the preferences in Section 300.68(h)(2) of the NCP, also consider and weigh the full range of factors in Section 300.68(e)(2) of the NCP. The selected alternative will represent the best balance across all evaluation criteria.

TASK 9 - FINAL FS REPORT

The FS will be prepared in a draft report and submitted for review and approval pursuant to Section VI of the Consent Order. The FS report will not be considered final until a Notice of Completion is issued by the U.S. EPA pursuant to the Consent Order. Deliverables and technical memorandums prepared previously will be summarized and referenced in order to limit the size of the report. The report will completely document the FS and the process by which the recommended remedial alternative was selected.

TASK 10 - RI/FS Schedule

While the periodic meetings are essential to good communication and proper coordination of the RI/FS, the scheduled meeting dates are not deadlines subject to stipulated penalties under Section XI of the AOC.

<u>Deliverable</u>	<u>Due Date</u>
1. Draft Task 1 Preliminary site Evaluation Report	Within forty-five days of the effective date of the Consent Order
2. Task 1 Report Review Meeting	Within fourteen days after receipt of Task 1 Report
3. Final Task 1 Preliminary Site Evaluation Report	Within twenty-one days of receipt of Agency comments on draft report
4. Draft RI/FS Workplan	Within ninety days of the effective date of the Consent Order
5. RI/FS workplan review meeting	Within twenty-one days of receipt of RI/FS workplan
6. Final RI/FS workplan	Within twenty-one days of receipt of Agency comments on draft RI/FS workplan
7. Draft Phase 1 Source Characterization TM	Within ninety days of EPA approval of final RI/FS workplan
8. Phase 1 TM Review Meeting	Within fourteen days after receipt of Phase 1 TM
9. Final Phase 1 Source Characterization TM	Within twenty-one days of receipt of Agency comments on draft Phase 1 TM
10. Draft Phase 2 Migration Pathway Assessment TM	Within ninety days of receipt of Agency approval of final Phase 1 TM

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| 11. Phase 2 TM Review Meeting | Within fourteen days of receipt of Phase 2 TM |
| 12. Final Phase 2 Migration Pathway Assessment TM | Within twenty-one days of receipt of Agency comments on Draft Phase 2 TM |
| 13. Draft Risk Assessment Report | Within sixty days of Agency approval of the Phase 2 TM |
| 14. Risk Assessment Report Review Meeting | Within fourteen days of receipt of the draft risk assessment report |
| 15. Final Risk Assessment Report | Within twenty-one days of receipt of Agency comments on the draft Risk Assessment Report |
| 16. Draft Remedial Investigation Report | Within forty-five days of Agency approval of Final Risk Assessment Report |
| 17. Remedial Investigation Report review meeting | Within fourteen days of receipt of draft RI report |
| 18. Final RI Report | Within twenty-one days of receipt of Agency comments on draft RI Report |
| 19. Draft Feasibility Study Report | Within sixty days of Agency approval of final RI report |
| 20. Feasibility Study Report review meeting | Within fourteen days of receipt of draft FS report |
| 21. Final FS Report | Within twenty-one days of Agency comments on Draft FS report |

Figure 1

